

=> s (increas? or enhanc (3a) (express? or produc or encod?) (3a) (protein?

1307174 INCREAS?
376424 ENHANCE?
281526 EXPRESS?
1484751 PRODUC?
90284 ENCOD?
78779 PROTEIN?
18023 POLYPEPTIDE?
29315 PEPTIDE?
1326824 GENE?
257007 SYNTHET?
7593 CODON?

L1 193 ((INCREAS? OR ENHANCE?) (3A) (EXPRESS? OR PRODUC? OR ENCOD?
) (

3A) (PROTEIN? OR POLYPEPTIDE? OR PEPTIDE? OR GENE?)) (P) (S

YNT

HET? OR CODON?)

=> s l1 and (prefer? (2a) codon?)

363456 PREFER?
7593 CODON?
394 PREFER? (2A) CODON?
L2 13 L1 AND (PREFER? (2A) CODON?)

=> d 1-13

checked L2 NTD

8/15/98

1. 5,786,464, Jul. 28, 1998, Overexpression of mammalian and viral proteins; Brian Seed, 536/23.5; 435/69.1, 91.5, 172.3, 252.3; 536/23.72 [IMAGE AVAILABLE]

2. 5,747,319, May 5, 1998, Human mRNA editing enzyme; Janice Au-Young, et al., 435/199, 243, 252.3, 254.11, 320.1, 325, 348, 410, 419; 536/23.2 [IMAGE AVAILABLE]

3. 5,716,849, Feb. 10, 1998, Genes for the biosynthesis of soraphen; James M. Ligon, et al., 435/419, 252.3, 252.31, 252.32, 252.33, 320.1; 536/23.1, 23.2, 23.7 [IMAGE AVAILABLE]

4. 5,689,052, Nov. 18, 1997, Synthetic DNA sequences having enhanced expression in monocotyledonous plants and method for preparation thereof; Sherri Marie Brown, et al., 800/205; 536/23.71; 800/250, DIG.56; 935/10, 30 [IMAGE AVAILABLE]

5. 5,625,136, Apr. 29, 1997, Synthetic DNA sequence having enhanced insecticidal activity in maize; Michael G. Koziel, et al., 800/205; 435/69.1, 172.3; 536/23.1, 23.71; 800/250, DIG.50 [IMAGE AVAILABLE]

6. 5,567,862, Oct. 22, 1996, Synthetic insecticidal crystal protein gene; Michael J. Adang, et al., 800/205; 435/69.1, 418; 800/250 [IMAGE AVAILABLE]

7. 5,567,600, Oct. 22, 1996, Synthetic insecticidal crystal protein gene; Michael J. Adang, et al., 536/23.71; 435/69.1, 172.3 [IMAGE AVAILABLE]

8. 5,563,064, Oct. 8, 1996, Process for preparing daunorubicin; Charles R. Hutchinson, et al., 435/252.3, 69.1, 172.3, 193, 252.33, 252.35, 320.1; 536/23.1, 23.2, 23.7 [IMAGE AVAILABLE]

9. 5,514,570, May 7, 1996, Squash mosaic virus genes and plants transformed therewith; De S. Gonsalves, et al., 435/172.3; 536/23.1, 23.72; 800/205, DIG.18 [IMAGE AVAILABLE]

10. 5,380,831, Jan. 10, 1995, Synthetic insecticidal crystal protein gene; Michael J. Adang, et al., 536/23.71; 435/69.1, 172.3; 800/205 [IMAGE AVAILABLE]

11. 5,364,781, Nov. 15, 1994, Process for preparing daunorubicin; Charles R. Hutchinson, et al., 435/193, 886, 888; 536/23.2; 930/240; 935/14 [IMAGE AVAILABLE]

12. 5,151,511, Sep. 29, 1992, DNA encoding avian growth hormones; Lawrence M. Souza, et al., 536/23.51; 435/320.1 [IMAGE AVAILABLE]

13. 5,089,406, Feb. 18, 1992, Method of producing a gene cassette coding for polypeptides with repeating amino acid sequences; Jon I. Williams, et al., 435/172.3, 69.1; 530/353, 356; 935/10 [IMAGE AVAILABLE]

=> e seed, brian/in

=> s e3,e4

12 "SEED, BRIAN"/IN

1 "SEED, BRIAN S"/IN

L3

13 ("SEED, BRIAN"/IN OR "SEED, BRIAN S"/IN)

=> d 1-13

checked C3 NM 8/15/98

1. 5,786,464, Jul. 28, 1998, Overexpression of mammalian and viral proteins; **Brian Seed**, 536/23.5; 435/69.1, 91.5, 172.3, 252.3; 536/23.72 [IMAGE AVAILABLE]

2. 5,726,293, Mar. 10, 1998, Affinity purification methods involving imidazole elution; **Brian Seed**, 530/413, 387.1, 391.1, 412; 548/335.1 [IMAGE AVAILABLE]

3. 5,723,583, Mar. 3, 1998, Antibody containing sialyl lewis X determinants; **Brian Seed**, et al., 530/387.3; 424/133.1; 530/391.1 [IMAGE AVAILABLE]

4. 5,674,734, Oct. 7, 1997, Cell death protein; Philip Leder, et al., 435/252.3, 69.1, 69.9, 183; 530/350; 536/23.1, 23.4, 23.5 [IMAGE AVAILABLE]

5. 5,656,592, Aug. 12, 1997, Use of relaxin as an analgesic and palliative for intractable pain; **Brian Seed**, et al., 514/12; 530/324 [IMAGE AVAILABLE]

6. 5,547,660, Aug. 20, 1996, Nail lacquer composition containing poly-hydroxystyrene; John Seed, et al., 424/61, 401 [IMAGE AVAILABLE]

7. 5,506,126, Apr. 9, 1996, Rapid immunoselection cloning method; **Brian Seed**, et al., 435/172.3, 320.1; 536/24.2 [IMAGE AVAILABLE]

8. 5,420,264, May 30, 1995, Non-human primate CD4 polypeptides, human CD4 molecules capable of glycosylation, fragments thereof, fusion proteins thereof, genetic sequences thereof, and the use thereof; **Brian** **Seed**, et al., 435/365, 243, 252.3, 320.1; 536/23.1, 23.4, 23.5, 23.53; 935/1, 11, 22 [IMAGE AVAILABLE]

9. 5,411,861, May 2, 1995, Rapid mutational analysis method; **Brian**

****Seed****, et al., 435/6, 7, 1, 69.1, 91.4, 172.3, 270; 530/388.2 [IMAGE AVAILABLE]

10. 5,358,857, Oct. 25, 1994, Method of preparing fusion proteins; Siegfried Stengelin, et al., 435/69.7, 69.1, 172.3; 536/23.4 [IMAGE AVAILABLE]

11. 5,227,293, Jul. 13, 1993, Fusion proteins, their preparation and use; Siegfried Stengelin, et al., 435/69.7, 69.1, 172.3 [IMAGE AVAILABLE]

12. 5,081,034, Jan. 14, 1992, Cloned genes which encode ELAM-1; Michael P. Bevilacqua, et al., 435/252.33, 252.3, 320.1, 365; 514/44; 536/23.5; 935/9, 70, 71, 72 [IMAGE AVAILABLE]

13. 4,286,964, Sep. 1, 1981, Polyfunctional epoxides and halohydrins used as bridging groups to bind aromatic amine group-containing alcohols and thiols to hydroxyl bearing substrates; ****Brian S. Seed****, 436/501; 8/181, 666, DIG.8; 422/56, 71; 435/6, 172.3; 436/530, 532; 536/43, 85; 935/19; 78 [IMAGE AVAILABLE]

=> e haas, jurgen/in

=> s e2

L4 4 "HAAS, JUERGEN"/IN

=> d 1-4

checked L4 now 8/15/98

1. 5,542,033, Jul. 30, 1996, Correction and modification of microprocessor chip operations; Son Dao-Trong, et al., 395/182.08, 185.04 [IMAGE AVAILABLE]

2. 5,517,438, May 14, 1996, Fast multiply-add instruction sequence in a pipeline floating-point processor; Son Dao-Trong, et al., 364/748.07, 748.14 [IMAGE AVAILABLE]

3. 5,143,696, Sep. 1, 1992, Selective gas sensor; ****Juergen Haas****, et al., 422/90; 324/663; 422/98 [IMAGE AVAILABLE]

4. 4,929,581, May 29, 1990, Catalytic diesel soot filter; Juergen Steinwandl, et al., 502/2; 60/299; 423/213.5; 502/78 [IMAGE AVAILABLE]

=>

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FILE 'MEDLINE' ENTERED AT 11:04:25 ON 15 AUG 1998

FILE 'WPIDS' ENTERED AT 11:04:25 ON 15 AUG 1998
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=> s ((increas? or enhanc?) (3a) (express? or produc? or encod?) (3a) (protein?

L1 180 ((INCREAS? OR ENHANC?) (3A) (EXPRESS? OR PRODUC? OR ENCOD?
) (3A) (PROTEIN? OR POLYPEPTIDE? OR PEPTIDE? OR GENE?))
(10A) (SYNTHET? OR CODON?)

=> s l1 and (prefer? (2a) codon?)

L2 12 L1 AND (PREFER? (2A) CODON?)

=> duplicate remove l2

L3 7 DUPLICATE REMOVE L2 (5 DUPLICATES REMOVED)

=> d 1-7 *checked 13 157 8/15/98*

L3 ANSWER 1 OF 7 WPIDS COPYRIGHT 1998 DERWENT INFORMATION LTD
AN 98-217200 [19] WPIDS
DNC C98-068890
TI New synthetic eukaryotic gene(s) - in which non-preferred or less
preferred ***codon*** (s) are replaced to provide high
level expression in mammalian cell(s).
DC B04 D16
IN HAAS, J; SEED, B
PA (GEHO) GEN HOSPITAL CORP
CYC 78
PI WO 9812207 A1 980326 (9819)* EN 92 pp C07H021-04
RW: AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL
OA PT SD SE SZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI
GB GE GH HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV
MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM
TR TT UA UG UZ VN YU ZW
ADT WO 9812207 A1 WO 97-US16639 970918
PRAI US 96-717294 960920
IC ICM C07H021-04
ICS C12N015-11; C12N015-33; C12N015-48; C12N015-85; C12P021-02

L3 ANSWER 2 OF 7 WPIDS COPYRIGHT 1998 DERWENT INFORMATION LTD
AN 97-202808 [18] WPIDS
DNC C97-064940
TI ***Increasing*** ***expression*** of eukaryotic
proteins - by replacing wild-type ***codon*** (s) with
other ***preferred*** ***codon*** (s).
DC B04 D16
IN HAAS, J; SEED, B
PA (GEHO) GEN HOSPITAL CORP
CYC 20
PI WO 9711086 A1 970327 (9718)* EN 79 pp C07H021-00
RW: AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE

W: CA JP
 EP 851868 A1 980701 (9831) EN C07H021-00
 R: AT BE CH DE DK ES FI FR GB GR IE IT LI LU NL PT SE
 ADT WO 9711086 A1 WO 96-US15088 960920; EP 851868 A1 EP 96-935882
 960920, WO 96-US15088 960920
 FDT EP 851868 A1 Based on WO 9711086
 PRAI US 95-532390 950922
 IC ICM C07H021-00
 ICS C07H021-04

L3 ANSWER 3 OF 7 BIOSIS COPYRIGHT 1998 BIOSIS DUPLICATE 1
 AN 98:76317 BIOSIS
 DN 01076317
 TI Improved translational efficiency of subtilisin YaB gene with
 different initiation codons in Bacillus subtilis and alkalophilic
 Bacillus YaB.
 AU Yeh C M; Chang H K; Hsieh H M; Yoida K; Yamasaki M; Tsai Y C
 CS Inst. Biochem., Natl. Yang-Ming Univ., Taipei 11221, Taiwan
 SO Journal of Applied Microbiology 83 (6). 1997. 758-763. ISSN:
 1364-5072
 LA English

L3 ANSWER 4 OF 7 WPIDS COPYRIGHT 1998 DERWENT INFORMATION LTD
 AN 96-188440 [19] WPIDS
 DNC C96-060244
 TI Synthetic genes encoding proteins normally expressed in mammalian
 cells -mutated to contain pref. degenerate ***codon***
 express ***protein*** at ***increased*** levels
 compared to natural gene.
 DC B04 D16
 IN SEED, B
 PA (GEHO) GEN HOSPITAL CORP
 CYC 38
 PI WO 9609378 A1 960328 (9619)* EN 74 pp C12N015-09
 RW: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE
 W: AU BG BR BY CA CN CZ FI HU JP KR MX NO NZ PL RO RU SG SI UA
 AU 9535099 A 960409 (9629) C12N015-09
 ZA 9507846 A 970528 (9727) 69 pp C12N000-00
 EP 781329 A1 970702 (9731) EN C12N015-09
 R: AT BE CH DE DK ES FR GB GR IE IT LI LU NL PT SE
 ADT WO 9609378 A1 WO 95-US11511 950908; AU 9535099 A AU 95-35099 950908;
 ZA 9507846 A ZA 95-7846 950918; EP 781329 A1 EP 95-931798 950908, WO
 95-US11511 950908
 FDT AU 9535099 A Based on WO 9609378; EP 781329 A1 Based on WO 9609378
 PRAI US 94-324243 940919
 IC ICM C12N000-00; C12N015-09
 ICS C12H000-00; C12N015-12; C12N015-33; C12N015-64

L3 ANSWER 5 OF 7 BIOSIS COPYRIGHT 1998 BIOSIS DUPLICATE 2
 AN 96:411768 BIOSIS
 DN 99134124
 TI Preference for guanosine at first codon position in highly expressed
 Escherichia coli genes: A relationship with translational efficiency.
 AU Gutierrez G; Marquez L; Marin A
 CS Dep. Genetica, Univ. Sevilla, Apartado 1095, E-41080 Sevilla, Spain
 SO Nucleic Acids Research 24 (13). 1996. 2525-2527. ISSN: 0305-1048
 LA English

L3 ANSWER 6 OF 7 WPIDS COPYRIGHT 1998 DERWENT INFORMATION LTD
 AN 92-049146 [06] WPIDS
 DNC C92-021868
 TI Analysis of ***codon*** pair ***preference*** (s) or
 organisms - for ***enhancing*** heterologous ***polypeptide***

. . . ***expression*** control folding or determining origin of a
nucleic acid.

DC B04 D16
IN GUTMAN, G A; HATFIELD, G W
PA (HATF-I) HATFIELD G W
CYC 1
PI US 5082767 A 920121 (9206)*
ADT US 5082767 A US 89-316321 890227
PRAI US 89-316321 890227
IC C12Q001-68

L3 ANSWER 7 OF 7 BIOSIS COPYRIGHT 1998 BIOSIS DUPLICATE 3
AN 87:404483 BIOSIS
DN BA84:80663
TI STRUCTURE-FUNCTION STUDIES ON BACTERIORHODOPSIN III. TOTAL SYNTHESIS
OF A GENE FOR BACTERIOOPSIN AND ITS EXPRESSION IN ESCHERICHIA-COLI.
AU NASSAL M; MOGI T; KARNIK S S; KHORANA H G
CS ZENTRUM MOLEKULARE BIOL. HEIDELBERG, IM NEUENHEIMER FELD, D-6900
HEIDELBERG, W. GERMANY.
SO J BIOL CHEM 262 (19). 1987. 9264-9270. CODEN: JBCHA3 ISSN: 0021-9258
LA English